

RO Systems-Basic Configuration

“B” Series

Product Description/Equipment Specifications

FLEXIBILITY

LATITUDE

ENGINEERING

EXECUTION

EXCELLENCE

*Process Water Systems designed with ultimate **FLEXIBILITY** in mind.*

Features at a glance:

- Quick Delivery, Installation and Start-Up
- 21 Models Having Permeate Flow Rates Ranging from 1 to 100 gpm
- All Models Feature 316 Stainless Steel, Multi-Stage, Centrifugal Pumps
- High Efficiency Motors Standard for all Models
- All Modes Feature FRP Pressure Vessels



Photo is for illustrative purposes only

General Description:

The FLEXX™ RO “B” Series System offering refers to a product line of single pass reverse osmosis (RO) units designed and manufactured for commercial/industrial applications. The product line incorporates units capable of supplying 1 to 100 gallons per minute of RO permeate. Each model consists of a pre-filter (5.0 micron), high pressure feed pump (316SS, multi-stage, centrifugal), appropriate number of membranes (thin film composite) housed in FRP pressure vessels. FLEXX™ RO “B” Series Systems are pre-engineered, pre-assembled units which require only feed water inlet, permeate water outlet, drain and power source connections.

Mechanical Description:

All components for the FLEXX™ RO “B” Series Systems are supported on a frame configured to provide maximum support for the components while allowing ready access for servicing, maintenance, and performance monitoring. 1 – 6 GPM unit frames are powder-coated aluminum, all other frames are epoxy-coated carbon steel.

Electrical & Operational Description:

All units are equipped with a control panel featuring a microprocessor based controller and HMI. Controller functions include:

- Pretreatment Interlock
- Inlet Valve control
- High Tank Level Shut Down
- Low Tank Level Restart
- Low Feed Pressure Sensing with Auto Restart
- Auto-Flush with Fixed Flush Interval and Duration
- Permeate Diversion Valve Output
- Two Operational Modes: Direct Feed and Tank Feed
- Temperature Compensated Conductivity Monitor with Percent Rejection and Adjustable Alarm Setpoint
- Alarm Output
- PLC and Thornton Quality Monitor with Staged Start-Up/Shutdown and Chemical Injection Interlock
- Water Temperature Monitor with Adjustable High Temperature Shutdown

Design Parameters:

Configuration	Single Pass, Multiple array as necessary
Feed Water Pressure (Min)	30 psig
Feed Water Temperature	77°F (RO performance based on Feed Water temperature will vary)
Feed Water Source	Softened, Chlorine Free
Pre-Filtration	5 micron nominal
Feed Water Fouling Index	Silt Density Index (SDI) <5
System Recovery	60-80% (RO Projection provided based on Feed Water characteristics)
Permeate Pressure Available	20-40 psig
Membrane Salt Rejection	99% nominal (based on 2000 ppm NaCl)

General Specifications:

Pump	316 SS, Multi-Stage, Centrifugal
Motor	High Efficiency
Pressure Vessel	FRP
Membrane	Filmtec: TW30-4040 (4" x 40"), BW30-400 (8" x 40")
Piping	Feed: PVC Permeate: PVC, Polypro Socket Fusion, Polypro Butt Fusion, Industrial Stainless Steel or Sanitary Stainless Steel
Feed Water Inlet Valve	Automated Solenoid
Reject Valve	Manual
Reject Recycle	Manual
Auto-Flush Valve	Automated Solenoid

Instrumentation Specifications:

Membrane Feed	Pressure Indicator, 0-300 psig, brass with stainless steel internals
Pre-Filter Gauge	Pressure Indicator, 0-100 psig, brass with stainless steel internals
Low Feed Pressure Switch	Adjustable 5-50 psig
Permeate Pressure Relief	Pressure Relief Valve
Permeate Flow	Rotameter
Reject-Recycle Flow	Rotameter
Reject Flow	Rotameter

Operating Limits:*

Max Operating Temperature	113°F
Feed Pressure	30-50 psig
*If any of the operating conditions are not within the limits given, consult factory for application assistance.	

Feed Water Requirements:*

Maximum SDI Rating	5
Maximum Free Chlorine	<0.1 PPM
*If any of the operating conditions are not within the limits given, consult factory for application assistance.	

Factory Procedures:

Assembly	Fully assembled at the factory
Wiring	Fully wired at the factory
Testing	Hydrostatic pressure test, electrical integrity test, factory simulated functional test
Shipping Preparation	Packaging appropriate for domestic shipping

Utility Requirements:*

Product Number	High Voltage Service	Pump HP	Waste Drain* (Max GPM)
ROB-01	230V-60Hz	3/4	1 GPM
ROB-02	230V-60Hz	3/4	2 GPM
ROB-03	230V-60Hz	1.0	3 GPM
ROB-04	230V-60Hz	1.0	4 GPM
ROB-05	230V-60Hz	1.5	5.5 GPM
ROB-07	230V-60Hz	3.0	7GPM
ROB-08	230/460V-60Hz	3.0	8 GPM
ROB-09	230/460V-60Hz	3.0	9 GPM
ROB-10	230/460V-60Hz	3.0	10 GPM
ROB-11	230/460V-60Hz	3.0	11 GPM
ROB-12	230/460V-60Hz	3.0	12 GPM
ROB-13	230/460V-60Hz	5.0	13 GPM
ROB-14	230/460V-60Hz	5.0	14 GPM
ROB-15	230/460V-60Hz	5.0	15 GPM
ROB-21	230/460V-60Hz	10	21.5 GPM
ROB-30	230/460V-60Hz	10	30 GPM
ROB-40	230/460V-60Hz	15	40 GPM
ROB-50	230/460V-60Hz	20	50 GPM
ROB-60	230/460V-60Hz	20	60 GPM
ROB-75	230/460V-60Hz	25	75 GPM
ROB-100	230/460V-60Hz	25	100 GPM

Physical Dimension Specifications:*

Product Number	Length (in)	Width (in)	Height (in)	Weight (lbs)
ROB-01	26	20	53	111
ROB-02	26	20	53	142
ROB-03	26	20	53	173
ROB-04	26	20	53	205
ROB-05	26	20	53	260
ROB-07	30	24	60	280
ROB-08	30	24	60	700
ROB-09	64	37	48	730
ROB-10	64	37	48	775
ROB-11	64	37	48	830
ROB-12	64	37	48	880
ROB-13	64	37	48	950
ROB-14	64	37	48	990
ROB-15	64	37	48	1050
ROB-21	64	37	48	2300
ROB-30	192	54	60	2600
ROB-40	192	54	60	2900
ROB-50	192	54	60	3100
ROB-60	192	54	60	3800
ROB-75	192	54	84	4300
ROB-100	192	54	84	5500

*Does not include operating space requirements.

Client Connection Specifications:*

Product Number	Feed Water	Permeate Water	Reject Water
ROB-01	3/4" FNPT	1/2" MNPT	3/4" Hose Barb
ROB-02	3/4" FNPT	1/2" MNPT	3/4" Hose Barb
ROB-03	3/4" FNPT	3/4" MNPT	3/4" Hose Barb
ROB-04	3/4" FNPT	3/4" MNPT	3/4" Hose Barb
ROB-05	3/4" FNPT	3/4" MNPT	3/4" Hose Barb
ROB-07	1" FNPT	3/4" MNPT	3/4" Hose Barb
ROB-08	1.5" FNPT	1" MNPT	1" MNPT
ROB-09	1.5" FNPT	1" MNPT	1" MNPT
ROB-10	1.5" MNPT	1" MNPT	1" MNPT
ROB-11	1.5" FNPT	1" MNPT	1" MNPT
ROB-12	1.5" FNPT	1" MNPT	1" MNPT
ROB-13	1.5" FNPT	1" MNPT	1" MNPT
ROB-14	1.5" FNPT	1" MNPT	1" MNPT
ROB-15	1.5" FNPT	1" MNPT	1" MNPT
ROB-21	2" FNPT	1" Victaulic	1.5" Victaulic
ROB-30	2" FNPT	1.5" Victaulic	1.5" Victaulic
ROB-40	2" FNPT	1.5" Victaulic	1.5" Victaulic
ROB-50	2" FNPT	1.5" Victaulic	1.5" Victaulic
ROB-60	2" FNPT	1.5" Victaulic	1.5" Victaulic
ROB-75	3" FNPT	2" Victaulic	1.5" Victaulic
ROB-100	3" FNPT	2" Victaulic	1.5" Victaulic

Reverse Osmosis Unit “B” Series Selection Matrix

Select

Select Select Select Select Select Select

EXAMPLE PART NUMBER

ROB-01

EXAMPLE ADDITIONAL SERVICES

SZD X X X X X

FIELD 1	Permeate Flow Rate GPM: Enter the code for the desired RO permeate flow.					
	Code	Code Description				
		<i>Permeate Flow (GPM)</i>	<i># of Elements</i>	<i>Element Size</i>	<i>Array</i>	<i>Elements/Vessel</i>
	ROB-01	1	1	4x40	1	1
	ROB-02	2	2	4x40	1-1	1
	ROB-03	3	3	4x40	1-1-1	1
	ROB-04	4	4	4x40	1-1-1-1	1
	ROB-05	5.5	5	4x40	2-2-1	1
	ROB-06	7	6	4x40	2-2-2	1
	ROB-07	8	7	4x40	2-2-2-1	1
	ROB-08	9	8	4x40	2-2-2-2	1
	ROB-09	10	9	4x40	3-2-2-2	1
	ROB-10	11	10	4x40	3-3-2-2	1
	ROB-11	12	11	4x40	4-3-2-2	1
	ROB-12	13	12	4x40	4-3-3-2	1
	ROB-13	14	13	4x40	4-4-3-2	1
	ROB-14	15	14	4x40	4-4-3-3	1
	ROB-15	21.5	4	8x40	1	4
	ROB-21	30	6	8x40	1-1	4/2
	ROB-30	40	8	8x40	1-1	4
ROB-40	50	10	8x40	2-1	4/2	
ROB-50	60	12	8x40	2-1	4	
ROB-75	75	16	8x40	2-2	4	
ROB-100	100	20	8x40	3-2	4	

FIELD 2	Additional Services: Enter the codes for the desired additional services.	
	Code	Code Description
	FSP	Factory System Passivation
	PGC	Pressure Gauge Calibration
	WHD	Welding Documentation
	SZC	Seismic Zone Wet Stamp
	SZD	Seismic Zone Drawings Only (Calculations by Others)
	BSI	Boroscope Inspection

